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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,509	02/06/2004	John A. Agostinelli	87516RLO	6550

7590 05/04/2005
Pamela R. Crocker,
Patent Legal Staff,
Eastman Kodak Company
343 State Street
Rochester, NY 14650-2201

EXAMINER

ALEMU, EPHREM

ART UNIT PAPER NUMBER

2821

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/773,509

Applicant(s)

AGOSTINELLI ET AL.

Examiner

Ephrem Alemu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2-06-04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings illustrated in Figs. 3b, 4b, 5b and 6b are objected to as failing to comply with 37 CFR 1.84(n) since the graphic drawing symbol (i.e., shading) used to indicate different materials (i.e., insulator, conductor, fuse, electrodes) cannot be clearly distinguished; and the drawing illustrated in Fig. 4b is objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "16, 26" and "34" have both been used to designate "insulator". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. **The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided.** The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

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The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because of the following reasons: In line 3, "including" should be deleted or corrected appropriately to avoid redundancy; and

in line 5, the use of the legal phraseology word "said" should be corrected. Correction is required. See MPEP § 608.01(b).

Claim Objections

4. Claims 2-5, 7, 9, 11 and 12 are objected to because of the following informalities:

(i) In claims 2-5, 7, 9, respectively, replace "An array comprising a plurality of rows of OLED pixels according to claim X" with -- The array according to claim X--, where X is 1, 6 or 8, for proper antecedent basis since claims 2-5 are dependent on claim 1, claims 7 and 9 are directly or indirectly dependent on claim 6.

(ii) In claims 11 and 12, respectively, replace "An area" with --The area-- for proper antecedent basis since claims 11 and 12 are dependent on claim 10. Appropriate correction is required.

(iii) In claim 12, change "an power source" with --a power source--.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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6. Claims 1, 2, 4 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by So et al. (US Pub. 2004/0095300).

Re claim 1, So discloses an array (i.e., passive matrix display) having a plurality of column electrodes and a plurality of rows of individually addressable OLED pixels, each row including a commonly shared electrode (Fig. 1-6; page 1, paragraph [0006]; page 2, paragraph [0022]), comprising:

wherein at least one OLED pixel in each row has a current limiting component (i.e., current limiting device 251, 254, 306, 312, 406, 412, 515, 615, 711, 810, 819, 822, 828) and an organic electroluminescent diode and such that the at least one OLED pixel (i.e., 239, 309, 409, 509, 621, 708, 810, 816, 825) is connected between the commonly shared electrode and one of the plurality of column electrodes for conducting current therebetween and wherein the organic electroluminescent diode (i.e., 239, 309, 409, 509, 621, 708, 810, 816, 825) is connected in series with the current limiting component (i.e., current limiting device 251, 254, 306, 312, 406, 412, 515, 615, 711, 810, 819, 822, 828) (Figs. 2-8; page 2, paragraphs [0023] & [0026]; page 4, paragraphs [0029] – page 5, paragraph [0037]).

Re claims 2 and 4, So further discloses the current limiting component may include at least one diode or fuse (Figs. 2-8; page 1, paragraphs [0008] - [0011]).

Re claim 13, So discloses a method for repairing of an array (i.e. OLED display as in Fig. 2) of individually addressable OLED pixels (i.e., OLED display integrity checking system 701), comprising:

a) forming the array (i.e. OLED display) as a plurality of rows of organic electroluminescent diodes (Figs. 1-6), each diode in each row connected between a commonly

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shared electrode for the each row and one of a plurality of column electrodes and each diode (708) in each row in series with a fuse (i.e., current limiting device 711) (Figs. 2-7; page 1, paragraphs [0006] – [0011]); page 2, paragraphs [0022] – [0024], page 4, paragraph [0036]); and

b) applying a reverse voltage between one said row and one said column electrode for blowing the fuse in series with a shorted diode (Figs. 2-7; page 1, paragraph [0012]; page 2, [0024], page 4, paragraph [0036]).

7. Claims 10-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Strip (US 6,870,196).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Re claim 10, Strip discloses an area lighting apparatus (i.e., OLED light source) comprising an array of OLED cells (i.e., OLEDs 14 including fuse 20) arranged as one or more banks (i.e., groups 14, 16) of OLED cells (i.e., OLEDs 14 including fuse 20), comprising:

a) wherein each said OLED cell (i.e., OLED 14 including fuse 20) comprises an electroluminescent diode (i.e., OLED 14) connected in series with a fuse (20);

b) each bank (i.e., groups 16, 20) includes a plurality of the OLED cells (i.e., OLEDs 14 including fuse 20) connected in parallel (Figs. 1, 2; Col. 2, lines 3-33); and

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c) the one or more banks (i.e., groups 16, 20) of OLED cells are connected to each other in series or in parallel (i.e., series/parallel) (Figs. 1, 2; Col. 2, lines 3-33).

Re claims 11 and 12, Strip discloses the plurality of banks of OLED cells are connected to a power source (18), wherein the power source being DC power supply or AC power source) (Figs. 1, 2; Col. 2, lines 8-10; Col. 2, lines 51-54).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over So et al. (US Pub. 2004/0095300).

Re claims 3 and 5, So discloses all the claimed limitations as applied to claims 1, 2 and 4, except the current limiting component (i.e., current limiting device 251, 254, 306, 312, 406, 412, 515, 615, 711, 810, 819, 822, 828) being at least one electroluminescent diode or a resistor.

Because, So teaches that the current limiting device either prevent or limit the current flowing across the defective pixel and further So discloses a fuse or diode as current limiting device, providing a resistor or an electroluminescent diode as a current limiting component would have been obvious since the only obvious difference between the diode and the electroluminescent diode is that the electroluminescent diode acts as a regular diode and also generate light when it is forward biased. Also, a resistor provides a resistance that will limit the

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current that flows between the column and row of the defective pixel element (as an example of a resistor being used as current limiting element see Tanabe et al. (US Pub. 2004/0042205)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the fuse or diode current limiting component of So's with resistor or electroluminescent diode for no other reason than limiting the current by providing a load for minimizing the effect of an individual defective element.

10. Claims 6, 7, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over So et al. (US Pub. 2004/0095300) in view of Silvestre (US 6,476,563).

Re claims 6, 7, 8 and 9, So discloses an array (i.e., passive matrix display) having a plurality of column electrodes and a plurality of rows of individually addressable OLED pixels, each row including a commonly shared electrode (Fig. 1-6; page 1, paragraph [0006]; page 2, paragraph [0022]), comprising:

wherein at least one OLED pixel in each row has a current limiting component (i.e., current limiting device 251, 254, 306, 312, 406, 412, 515, 615, 711, 810, 819, 822, 828) and an organic electroluminescent diode and such that the at least one OLED pixel (i.e., 239, 309, 409, 509, 621, 708, 810, 816, 825) is connected between the commonly shared electrode and one of the plurality of column electrodes for conducting current therebetween and wherein the organic electroluminescent diode (i.e., 239, 309, 409, 509, 621, 708, 810, 816, 825) is connected in series with the current limiting component (i.e., current limiting device 251, 254, 306, 312, 406, 412, 515, 615, 711, 810, 819, 822, 828) (Figs. 2-8; page 2, paragraphs [0023] & [0026]; page 4, paragraphs [0029] – page 5, paragraph [0037]).

So does not disclose that each pixel includes a plurality of subpixels, and each row of OLED pixels includes a commonly shared electrode, wherein the subpixels being connected in parallel between a row electrode and a column electrode, and each subpixel further includes a series connected electroluminescent diode and a current limiting component.

Silvestre discloses a pixel (6) including a plurality of subpixels (6a, 6b, 6c, 6d), and each row of OLED pixels includes a commonly shared electrode (9), wherein the subpixels being connected in parallel between a row electrode (9) and a column electrode (4', 4''), and each subpixel further includes a series connected electroluminescent diode (i.e., sub-LEDs 11^a, 11^b, 11^c, 11^d) and a current limiting component (i.e., fuse elements 10) (Figs. 1-3; Col. 2, line 17- Col. 3, line 20; wherein the column electrode overlaps commonly shared electrodes and is segmented to form the electroluminescent diode between each segment and the commonly shared electrode, thereby forming a parallel diode for each of the segment, wherein each of the segment is a strip of the column electrode material).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the pixels of So device by dividing the pixel into plurality of parallel subpixels in series with a current limiting component (i.e., fuse elements) as taught by Silvestre for the purpose of avoiding dark spot pixel area by selectively isolating the defective subpixel as taught by Silvestre (see Silvestre Col. 3, lines 1-32))

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Duggal et al. (US 6,800,999); and Tanabe et al. (US Pub. 2004/0042205); teach similar inventive subject matter.

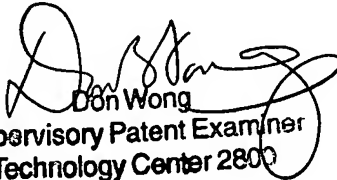
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Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ephrem Alemu whose telephone number is (571) 272-1818. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Don Wong
Supervisory Patent Examiner
Technology Center 2800

EA
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